<u>IN THE UNITED STATES PATENT AND TRADEMARK OFFICE</u>

RECEIVED
CENTRAL FAX CENTER
APR 1 9 2004

OFFICIAL

Applicant:	Stanton Keeler		
Assignee:	DPHI Acquisitions, Inc.		
Title:	Error Correction Code Block Format		
Serial No.:	09/872,060	Filing Date:	June 1, 2001
Examiner:	Joseph D. Torres	Group Art Unit:	2133
Docket No.:	M-11585 US		

AFFIDAVIT UNDER RULE 1.132

DAVID H DAVIES, being duly sworn, does hereby depose and say as follows

LAW OFFICES OF
MACPHERSON KWOK CHEN &
HEID LLP
2402 MICHELSON DRIVE
SUITE 210
IRVINE CA 92612
(949) 752-7040
FAX (949) 752-7049

PAGE 4/16 * RCVD AT 4/19/2004 2:17:42 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/3 * DNIS:8729306 * CSID:9497527049 * DURATION (mm-ss):04-30

That he received a Bachelor of Science Degree in Chemistry from University College London in 1964, and that he received the degree of Doctor of Philosophy in Physical Chemistry from University College London in 1967 and he received his MBA from the University of Pittsburgh in 1972.

That he has been employed by the assignee of the present application since 1999, where he holds the position of Chief Technology Officer. That prior to his present employment, he worked at 3M Company (now Imation) , where he held positions of Laboratory Manager for Optical Storage (81-84), and Manager of the Optical Storage Project (84-91) where he led the development and commercialization of several optical storage media products. He is recognized as a key developer of the CDROM format and was elected a Fellow of the SPIE (The Optical Engineering Society) for this achievement. He is the author of many technical papers and book contributions on Optical Storage, and has numerous US patents in the field of data storage. Between 1991 and 1999 he was Vice President at Ampex corp. (Magnetic Storage) and then Senior Vice president at Siros Corp (Holographic Storage). Dr Davies has chaired many conferences in the field of Data Storage and also been the Invited or keynote speaker at many such conferences world wide. He has been an Instructor in Optical Storage for the Institute of Electrical & Electronic Engineers, for the SPIE, for the Institute for Graphic Communications and other organizations.

That based upon the above-described education and experience, he is familiar with the removable optical disk arts in general, and in particular the differences between what DataPlay has designated as "second-surface" optical disks vs. what DataPlay has designated as "first-surface" optical disks as claimed in the present application. That, should optical disks be removable, such disks will always be subject to contamination by dust and other surface imperfections such as scratches. That to combat such deleterious effects, it is common practice to use a relatively thick layer of transparent material such as polycarbonate to overlay an optical disk's information layer. That dust and other surface imperfections on the surface of the relatively thick layer are thus many wavelengths removed from the underlaying information layer with respect to the wavelength of the laser beam being used to read/write this information layer. That because the surface imperfections are thus many wavelengths removed from the information layer, these imperfections are defocused with respect to an optical disk drive head that is focusing on the information layer. That DataPlay

LAW OFFICES OF
MACPHERSON KWOK CHEN &
HEID LLP
2402 MICHELSON DRIVE
SUITE 210
IRVINE CA 92612
(949) 752-7040
FAX (949) 752-7049

has denoted optical disks that include this defocusing transparent layer "second-surface" optical disks. That, with the exception of the present assignee's optical disks, all commercially-available removable optical disks are second-surface optical disks. That, for example, DVDs and CD-ROMs are second-surface disks.

That, although such relatively thick transparent layers in second-surface disks effectively combat the effects of dust and other surface imperfections, the thickness of this transparent layer introduces substantial optical aberrations and other undesirable effects. That these aberrations limit the miniaturization of the features used to represent data in the information layer because the laser beam used to read these features cannot be so precisely focused. That the data density in second-surface optical disks is thus limited by these aberrations. That second-surface optical disks combat this reduced data density by having a relatively large diameter such as that possessed by CD-ROMs and DVDs.

That DataPlay developed a portable optical disk drive system. That, because of this portability, DataPlay desired to reduce the size of the accompanying optical disk. That such miniaturization proved to be problematic if a second-surface optical disk were used because the aberration problem limited the data storage capacity of the resulting optical disk. That to provide a miniaturized, portable, optical disk drive system, DataPlay developed what DataPlay has denoted as a "first-surface" optical disk. That the first-surface optical disk developed at DataPlay does not possess a relatively thick transparent layer overlaying the disk's information layer. That first-surface optical disks developed at DataPlay include embodiments having no layer whatsoever overlaying the information layer. That other embodiments of first-surface optical disks developed at DataPlay include embodiments having a transparent layer overlaying the information layer, but that such a transparent layer is of a thickness such that it does not defocus any dust particles or other surface imperfections as discussed above but instead functions to provide optical coupling and improved contrast. That, regardless of whether such a transparent layer is implemented, first-surface disks did not possess the aberration problems suffered by second-surface optical disks. That because the aberration was thus reduced, the feature size used to encode data in the information layer could be reduced to increase data density.

LAW OFFICES OF
MACPHERSON KWOK CHEN &
HEID LLP
2402 MICHELSON DRIVE
SUITE 210
IRVINE CA 92612
(949) 752-7040
FAX (949) 752-7049

That, although DataPlay first-surface optical disks solved the aberration problem suffered by second-surface optical disks, these first-surface optical disks in turn suffered from the effects of dust, which was no longer defocused but instead lay in the same optical plane as the information layer. That the inventor of the present application addressed this problem by

developing a first-surface optical disk having a robust ECC block. That this combination – namely the combination of a first-surface disk and robust ECC enabled DataPlay to manufacture optical disks possessing a 0.5 gigabyte storage capacity yet still have diameters no larger than 40 mm.

That, in light of the above discussion, he reviewed the pending claims of the present application. That he agrees that these claims could be grouped into two groups: Group I comprises claims 16 through 20 and corresponds to first-surface disks having a transparent layer with the robust ECC block as invented by the inventor of the present application. Group II comprises claims 21 through 24 and corresponds to first-surface disks without a transparent layer with the robust ECC block as invented by the inventor of the present application.

That he has reviewed the following prior art cited against these claims: U.S Pat. Nos. 5,416,757 (the '757 patent), 6,332,206 (the '206 patent), and the ECMA-729 standard for DVD-Recordable Disks. That each of these references discloses only the use of second-surface disks. For example, that:

1) The '757 patent describes in its background section the commonplace second-surface use of a 1.2 mm thick transparent layer to defocus dust particles by removing them from "the focal plane of the objective lens in the optical head." The '757 patent further describes the possibility of using optical disks having a 0.6 mm thick transparent layer and that disk drives configured for a transparent layer thickness of 1.2 mm would be incompatible for use with disks having the 0.6 mm thickness and vice-versa. As set forth, for example, in the summary and abstract, the '757 patent is directed to an optical disk drive that would be compatible with both thicknesses. However, a thickness of 0.6 mm would also defocus dust particles and such a disk is plainly a second-surface disk. Thus, the '757 patent is directed to a compatibility problem existing between two second-surface disks.

2.) The '206 patent is directed to a particular form of error correction processing in an optical disk drive as set forth, for example, in the abstract. It makes no mention of the ECC environment peculiar to a first-surface disk. Indeed, the only optical disk identified in the '206 patent is a DVD, a well-known second-surface disk. See. col. 23, line 29.

LAW OFFICES OF
MACPHERSON KWOK CHEN & HEID LLP
2402 MICHELSON DRIVE
SUITE 210
IRVINE CA 92612
(949) 752-7040
FAX (949) 752-7049

3.) The ECMA-729 standard is directed to the mechanical, physical and optical characteristics DVD-R optical disks, which are well-known second-surface disks.

That, based upon his review of these three cited references, he can see no motivation in these references to take their disclosed second-surface optical disks and modify them to produce the first-surface disks with robust ECC as claimed in the present application, a modification that provides the beneficial result of allowing the resulting optical disk to be miniaturized for portable applications yet retain sufficient data density as set forth above.

Further Deponent Sayeth Not,

David H Davies

Sworn and subscribed to me before this 13th day of April, 2004

Kathy A. Bowers

Notary Public

My commission expires My Commission Expires 10/19/2005

LAW OFFICES OF
MACPHERSON KWOK CHEN & HEID LLP
2402 MICHELSON DRIVE
SUITE 210
IRVINE CA 92612
(949) 752-7040
FAX (949) 752-7049